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Federal Communications Commission  
Washington, D.C. 20554

April 8, 2002

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FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

William F. Caton  
Acting Secretary  
Office of the Secretary  
Federal Communications Commission  
445 12th Street, S.W., Room TW-B204  
Washington, D.C. 20554

**Re: Ex Parte Meeting – Application by Verizon New England Inc.  
for Authorization to Provide In-Region, InterLATA Service in  
the State of Vermont (Docket No. 02-7)**

Dear Mr. Caton:

The Pricing Policy Division (PPD) of the Wireline Competition Bureau of the Federal Communication Commission (Commission) hereby provides notice of an *ex parte* meeting held on April 3, 2002 with representatives of Telcordia Technologies (Telcordia). The meeting was held in response to a request from PPD staff, and Telcordia is not a party to this proceeding. PPD therefore files this notice of the meeting pursuant to the Commission's *ex parte* rules. See 47 C.F.R. §§ 1.1204(a)(10)(iii), 1.1206(b).<sup>1</sup>

The following PPD staff members attended the meeting: Tamara Preiss, Deena Shetler, Aaron Goldschmidt, Josh Swift, Nese Guendelsberger, Monica Desai, Victoria Schlesinger, Douglas Galbi, Raj Kannan, Steve Morris, Richard Kwiatkowski, and Carol Canteen. The following Telcordia representatives attended the meeting: Louise Tucker, David Garfield, and Wilfred McKoy.

During the meeting, Telcordia representatives explained busy hour engineering in the context of the Switching Cost Information System (SCIS) model. Telcordia representatives also discussed busy hour to any time, any day cost calculation. The attached written materials accurately summarize Telcordia's presentation.

Sincerely,

Deena Shetler  
Deputy Chief, Pricing Policy Division  
Wireline Competition Bureau

<sup>1</sup> We determine that it is in the public interest to publish notice of this *ex parte* meeting. See 47 C.F.R. § 1.1200(a)

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Attachments

cc: Qualex International, Inc.  
Susan Pie, Room 5-C224



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## **Busy Hour Engineering In SCIS**

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# **Representative Calculations**

David Garfield  
732-699-2482  
dgarfiel@telcordia.com  
April 3, 2002

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## **“Busy Hour” Switching System Traffic**

- Provide Best Possible Service At The Least Possible Cost
- Switching equipment provided to accommodate “peak” load that occurs in a specific time period (Busy Hour)
  - Include frequent peaks (i. e., normal business days)
  - Exclude infrequent peaks (Mother’s day, snow storms, etc.)
- “Busy Hour” Determined From Special Traffic Study
  - Traffic measured every hour every day
  - Data from weekends & holidays excluded
  - “Busy Hour” determined from remaining data
- Traffic Measured Only In “Busy Hour” Thereafter
  - Traffic measured every business day throughout the year

## **“Busy Hour” Switching System Traffic**

Month	Day	BH Traffic (Minutes)	BH Minutes Per Line	CCS Per Line
January	Day 1	50,000	5	3.0 $(5 * 60) / 100$
	Day 2	43,000	4.3	2.58 $(4.3 * 60) / 100$
	Day 3	47,500	4.75	2.85 $(4.75 * 60) / 100$
	...	...	...	...
...	...	...	...	...
...	...	...	...	...
December	...	...	...	...
	Day 363	52,000	5.2	3.12 $(5.2 * 60) / 100$
	Day 364	49,800	4.98	2.99 $(4.98 * 60) / 100$
	Day 365	40,300	4.03	2.42 $(4.03 * 60) / 100$

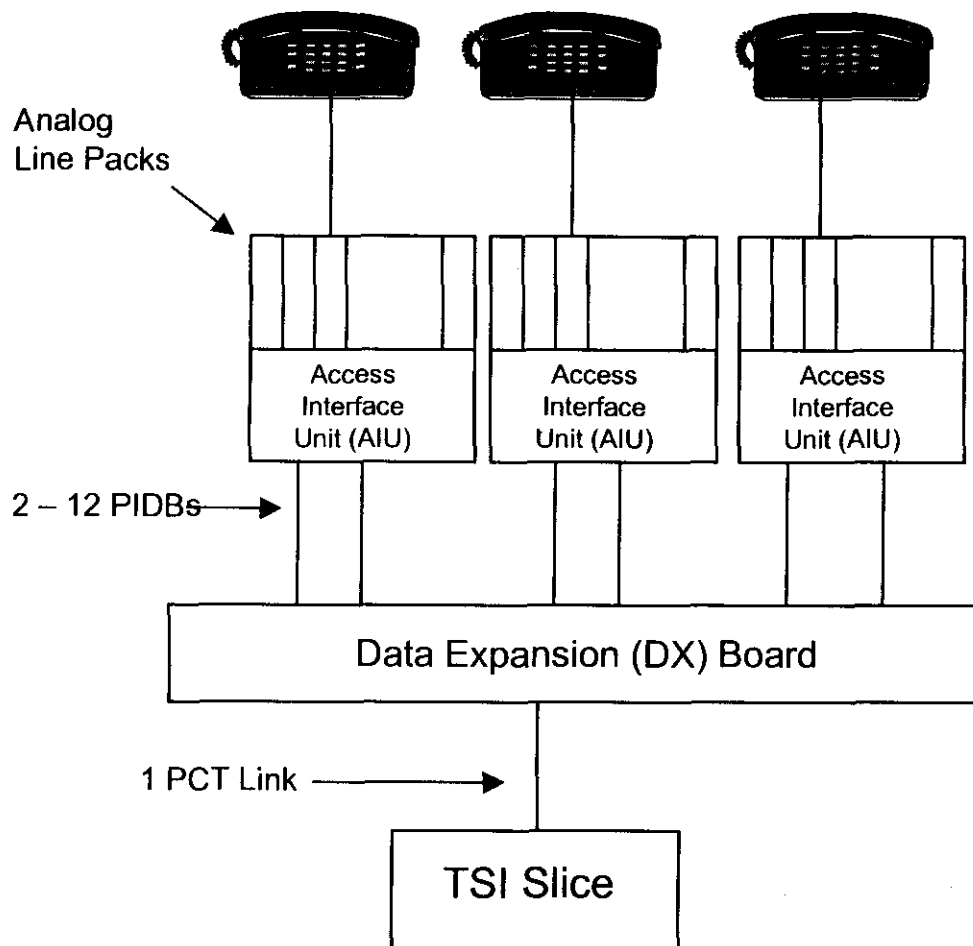
## **“Busy Hour” Switching System Traffic**

- High Day Busy Hour (HDBH)
  - Maximum (Day 1, Day 2, ..., Day 365)
  - Exclude weekends & holidays
- Average Busy Season Busy Hour (ABSBH)
  - Determine total traffic by month, excluding weekends & holidays
  - Determine 3 busiest months of the year

$$\frac{\text{Busy Month 1} + \text{Busy Month 2} + \text{Busy Month 3}}{\sim 60 \text{ Days (90 Days Less Weekends \& Holidays)}}$$

- Time Consistent Busy Hour (TCBH)
  - Same busy hour assumed each day
  - Data measured in the same hour each day
- Bouncing Busy Hour (BBH)
  - Busy hour can be different each day
  - Data measured in true busy hour each day
  - Used as the basis for Extreme Value Engineering (EVE)

# Lucent's 5ESS Access Interface Unit (AIU) - Architecture



## Application Pack

- 32 analog lines per analog line pack
- Provides BORSCHT

## AIU

- 20 slots for application packs
- 4 ring generators required for power ringing
  - Consumes 4 application pack slots
  - Common resource for 3 AIUs
  - 2 of 3 AIUs have 640 line capacity ( $20 * 32$ )
  - 1 of 3 AIUs have 512 line capacity ( $16 * 32$ )
- Concentration ratio based on PIDBs per AIU

# SCIS/MO Input Data - Analog Lines Terminated On AIU

General			
<b>HDABS</b>	Enter the ratio of High Day Busy Hour CCS to Average Busy Season Busy Hour CCS, not the call ratio. Range: 1.00 - 1.30	HD/ABS CCS Ratio	
<b>LineFill</b>	Enter a single administrative fill factor applicable to all 2 wire POTS and BRI line terminations. Range: 0.01 - 100.	2 Wire Line Administrative Fill Factor	
Lines & Trunks			
<b>HL1PLines</b>	Enter number of working POTS lines terminated on the Access Interface Unit (AIU). Range: 0 - 588800.	Number of AIU POTS lines	
<b>L1PCCS</b>	Enter the ABSBH originating and terminating CCS per line for POTS lines terminated on the Access Interface Unit (AIU). Range: 0.01 - 36.	ABSBH O+T CCS Per Line for AIU POTS lines	



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# PIDBs Per AIU Engineering

<b>Table:</b> AIU PIDB CCS Capacity Table <b>Generic:</b> 5E15 <b>Effective Date:</b> March 1, 2001					
	Item No.	Description	PIDBs	ABSBH CCS Capacity	HD CCS Capacity
	1	0 PIDBs Per AIU	0	0	0
	2	2 PIDBs Per AIU	2	1843.2	2073.6
	3	4 PIDBs Per AIU	4	3686.4	4147.2
	4	6 PIDBs Per AIU	6	5875.2	6220.8
	5	8 PIDBs Per AIU	8	7833.6	8294.4

- Determine PIDBs per AIU based on:
  - 640 lines per AIU
  - 2.8 ABSBH O+T CCS per line
  - 1.2 High Day to Average Busy Season ratio

- Determine PIDBs per AIU based on:
  - 512 lines per AIU
  - 2.8 ABSBH O+T CCS per line
  - 1.2 High Day to Average Busy Season ratio

# PIDBs Per AIU Engineering

Table: AIU PIDB CCS Capacity Table  
 Generic: 5E15  
 Effective Date: March 1, 2001

Item No.	Description	PIDBs	ABSBH CCS Capacity	HD CCS Capacity
1	0 PIDBs Per AIU	0	0	0
2	2 PIDBs Per AIU	2	1843.2	2073.6
3	4 PIDBs Per AIU	4	3686.4	4147.2
4	6 PIDBs Per AIU	6	5875.2	6220.8
5	8 PIDBs Per AIU	8	7833.6	8294.4

## 640 Lines per AIU

- ABSBH CCS demand =  $640 * 2.8 = 1792$
- ABSBH based PIDBs per AIU = 2
- HDBH CCS demand =  $640 * 2.8 * 1.2 = 2150.4$
- HDBH based PIDBs per AIU = 4
- PIDBs per AIU<sub>640</sub> =  $\text{Max}(2,4) = 4$
- ABSBH PIDB CCS capacity = 3686.4

## 512 Lines per AIU

- ABSBH CCS demand =  $512 * 2.8 = 1433.6$
- ABSBH based PIDBs per AIU = 2
- HDBH CCS demand =  $512 * 2.8 * 1.2 = 1720.32$
- HDBH based PIDBs per AIU = 2
- PIDBs per AIU<sub>512</sub> =  $\text{Max}(2,2) = 2$
- ABSBH PIDB CCS capacity = 1843.2



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## **Investment Per ABSBH Line (O+T) CCS**

- **Final ABSBH CCS Capacity Per AIU**

$$\frac{2*3686.4+1*1843.2}{3} = 3072.0$$

- **Investment per Line (O + T) CCS (Part B) for analog lines on AIU:**

$$\frac{\text{AIU Inv} + \text{DX Board Inv} + \text{PIDB Activ Fees}}{\text{CCS capacity of PIDBs per AIU (3072)}}$$



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## ***Busy Hour to Any Time Any Day Cost Calculation***

**Wilfred A. McKoy**

**Director – Cost Models Practice**

**770-351-4069**

**Email: [wmckoy@telcordia.com](mailto:wmckoy@telcordia.com)**

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# Investment to Cost Calculation

$$\text{Any Time Any Day Cost} = \frac{\text{Investment per BH Call} * \text{ACF} * \text{BHTD Ratio}}{\text{EBDY}}$$

## Busy Hour/Total Day Ratio:

- The amount of traffic in the Busy Hour compared to the total amount of traffic carried over 24 hour period.

## Equivalent Business Days Per Year:

- This number allows for resources to be recovered equally over all or a majority of days in the year.
- User would determine if the feature is a POTS or Business feature - thus how many days are in the year.

## **Investment to Cost Calculation**

***(Conversion of SCIS Investment Per BH CCS to BH Call)***

**Investment Per BH Call = SCIS/MO Investment Per BH CCS \* HT Per Call**

Example

$$\$50 * 6 = \$300 \text{ Per BH Call}$$

Where:

**\$50 = SCIS/MO Inv. Per BH CCS**

**6 = Holding Time Per Call in CCS (*10 minute call = 600 seconds = 6 CCS*)**

## Investment to Cost Calculation (Example)

$$\text{Any Time Any Day Cost} = \frac{\text{Investment per BH Call} * \text{ACF} * \text{BHTD Ratio}}{\text{EBDY}}$$

$$\$300.00 * .30 * .10 / 365 = \$0.025 \text{ Cost per Call}$$

where:

\$300.00 = Investment per BH Call

.30 = Annual Cost Factor (ACF)

10% = BHTD Ratio

365 = EBDY